REMARKS

Claims 1-9, 11-16 and 18-48 are pending in the application. Claims 18, 19 and 35-48 were withdrawn from consideration and are hereby cancelled to further prosecution of this application while reserving the right to file a divisional application. In the Office Action of June 11, 2008, claims 1-9, 11-16, and 20-34 stand rejected. Claims 1, 11, 12, 13, 20 and 26 have been amended. The application now includes claims 1-9, 11-16 and 20-34.

The Office Action rejected claims 1-9 and 11-16 under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. The Office Action stated that the original specification does not appear to support the claimed recitation of "proteinaceous material to alcohol is greater than 1:1." The Office Action stated that the original specification discloses alcohol in an amount of 5-20%. The Office Action stated that the original specification recites a process reduction in color degradation and does not support the enhancement of color characteristics but rather preservation.

Applicants have amended claim 1 to recite that the alcohol is in the range of about 5 to 20 percent by weight and to more clearly state that the color characteristics are preserved as suggested by the Examiner. (However, support for enhanced color characteristics may be found on page 4, lines 1-8). Support for the 5 to 20 percent by weight amendment is found on page 6, lines 18-20. Applicants submit that amended claim 1 and dependent claims 2-9 and 11-16 now comply with the written description requirement. Applicants respectfully request the removal of the rejection of these claims under 35 U.S.C. 112, first paragraph, based on the above claim amendments.

The Office Action rejected claims 1-9, 11-15 and 20-32 under 35 U.S.C. 103(a) as being unpatentable over JP 55-88662 (JP '662). The Office Action alleges that JP '662 discloses a process of preparing a soybean protein material wherein soybean material is extracted with a mixture of alcohol and a reducing agent at a temperature, for example, of 70°C. The Office Action states that the product is inherently vented of pressure when the product is inevitably exposed to ambient pressures wherein it follows that evaporation of all or essentially all of the alcohol is expected due to pressure release and exposure to ambient pressure. The Examiner indicates that JP '662 is silent regarding the holding time and such determination would have been well within the purview of one having ordinary skill in the art. The Office Action further alleges that the time and temperature recited in the present claims would have been obvious based on the inverse relationship between time and temperature. The Examiner alleges that claims which call for use of a temperature greater than about 90°C and pressure in the range of 10-30 lb/in^2 and would have been obvious through routine experimental optimization. The Examiner also stated that the solubility and color characteristics would be inherently enhanced due to following the particular method steps commensurate with time and temperature modification with those of the instant claimed invention. In response to Applicants' previous arguments, the Examiner disagrees with the use of alcohol amounts in JP '662. The Examiner further states that since JP '662 discloses a temperature range of preferably between 50-70°C that such indicates a broader range was contemplated in JP '662 and thus does not teach away from temperatures above 70°C and that the decrease in the desirability of the color tone is only preferred.

Applicants respectfully disagree. There are a number of differences between the claimed method and the method in JP '662. The differences include the amount of alcohol used in the mixture, the temperature used, the length of time of the reaction, and the use of higher pressure. In addition, the liquid in the reaction is removed by evaporation as opposed to extraction and filtration. The small amounts of alcohol used in the method and the elimination of tedious steps such as extraction and filtration result in substantial cost savings. Applicants discuss each of these issues in greater detail below.

Applicants disagree with the Examiner's statement as to how much alcohol was used in the process disclosed in JP '662. Although JP '662 states "solvent ratio of 1:6", it is believed that the ratio is 1 part of the soybean powder to 5 or 6 parts alcohol based on the actual amounts disclosed in JP '662. Applicants refer to JP '662 page 4, #1, wherein 100g of soybean powder is extracted with 500 grams of alcohol. To interpret the phrase "solvent ratio of 1:6" as 1 part alcohol to 6 parts soybean powder would be contrary to what is actually disclosed. The only explanation for the phrase "solvent ratio of 1:6" is that "solvent" refers to the first value (1) in the ratio term. The actual concentration of alcohol used in JP '662 is well over the range of about 5 to 20 percent by weight of alcohol as claimed.

The amended claims also recite that all or substantially all of the liquid in the mixture is removed by venting or releasing the pressure to ambient pressure. The use of the high temperature and pressure in combination with the low amounts of alcohol causes all or substantially all of the liquid to form a vapor. Thus, upon venting, all or substantially all of the liquid evaporates out of the proteinaceous product. In contrast, large amounts of alcohol are used in JP '662 in combination with low temperatures and ambient pressure. Most of the alcohol in JP '662 is in a liquid phase. Accordingly, JP '662 teaches removing the alcohol by filtration not by releasing pressure so the alcohol can evaporate as being claimed. In fact, there is no build up of pressure in the reaction of JP '662 and thus, no release of pressure. The reaction is always exposed to ambient pressure unlike the claimed invention.

With respect to the temperature, pressure and holding time claimed, Applicants submit that the combination of these three parameters are not contemplated in JP '662 and are not within the genus described in JP '662. Further, a person of ordinary skill in the art would not expect the claimed method to be successful with a reasonable expectation of success.

According to the MPEP, "A prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." See MPEP 2141.02(VI) emphasis retained.

JP '662 does not teach the alcohol content of about 5 to 20 percent by weight as stated above. Furthermore, the JP '662 does not teach or suggest that the pressure can be increased or changed in anyway to obtain the desired products. JP '662 only discloses ambient pressure. There is no buildup of pressure and thus no venting. The use of pressure of greater than 10psi is not even contemplated in JP '662.

Applicants disagree with the Examiner's assertion on page 8 of the Office Action that "using temperatures higher than 70°C the color tone decreases, it is only preferred that this be avoided. As such, this does not appear to be a clear teaching away from use of temperature above 70°C." First, the claim as amended claims the combination of preserved color characteristics and after being processed at a temperature of 90°C. JP '662 is a clear teaching away from this combination. JP '662 clearly states that when the temperature was higher than 70°C, the color tone of the CSP decreased. In the claimed invention color is preserved at temperatures significantly higher than 70°C. Applicants assert that a person of ordinary skill in the art would be led away from using the higher temperatures as claimed because a person of ordinary skill in the art would want to preserve color and that a temperature higher than 50-70°C would not preserve color. The statements in the Office Action on page 8 state that the disclosure in JP '662 does not appear to be a clear teaching away from the use of temperature above 70°C is not understood. The word "preferably" does not indicate a broader range (50-70°C) than was contemplated since a higher temperature would not produce the product contemplated in JP '662. Even *assuming arguendo* that the disclosure of a preferred range of 50-70°C somehow contemplates a higher temperature, it still would not produce the product as in the amended claims. The use of a higher temperature would produce a product of a decreased color tone according to JP '662. Therefore, when all of the elements of the claims of the instant application are considered, the result is surprising in view of the disclosure of JP '662. Thus, the JP '662 would not teach or suggest to a person of ordinary skill in the art to use the combination of temperature, time and pressure as claimed in the present invention.

Applicants further assert that even if the temperature, time and pressure of the claimed method were members of the genus described in JP '662, the claimed method is still non-obvious over JP '662. The MPEP states that the scope and content of the prior art must be determined. It further states that one of the considerations must be"...the number of species encompassed by the genus taking into consideration all of the variables possible." See MPEP 2144.08(II)(A)(1)(D). The Examiner's assertion that a person of ordinary skill in the art knows the relationship between the temperature, time and pressure and would have arrived at the claimed method through routine experimental optimization is untenable given the numerous possible combinations of time, temperature and pressure and that the only guidance provided by JP '662 is 50-70°C for about one hour at ambient pressure.

The MPEP further states that determination must be made as to whether one of ordinary skill in the art would have been motivated to select the claimed species or subgenus. "...should determine whether one of ordinary skill in the relevant art would have been motivated to make the claimed invention as a whole, i.e., to select the claimed species or subgenus from the disclosed prior art genus." MPEP 2144.08(II)A4. Since JP '662 clearly states that temperatures over 75°C would be detrimental to the product characteristics, then how can one skilled in the art be motivated or realize that temperatures over 75°C are plausible.

In conclusion, there is no teaching or suggestion in JP '662 related to the claimed method. The only place where one can find the motivation or suggestion for obtaining a proteinaceous product with enhanced solubility and preserved color characteristics by use of high temperatures and pressures but without the need for extraction is Applicant's disclosure. To use Applicant's disclosure as a guide is impermissible.

Based on the above discussion, Applicants respectfully requests that the rejection of these claims under 35 U.S.C 103 over JP '662 be withdrawn.

The Office Action rejected claims 1-4, 8, 9, 11-15, 20, 21 and 26-32 under 35 U.S.C. 103(a) as being unpatentable over Ferrara et al. The Office Action stated that Ferrara et al discloses a method for preparing a soy protein product by blending the protein with alcohol and also a reducing agent at a temperature above ambient temperature. The Office Action alleged that the product is inherently vented of pressure when the product is inevitably exposed to ambient pressures wherein it follows that evaporation of all or essentially all of the alcohol is expected due to pressure release and exposure to ambient pressure. The Office Action further stated that the specific alcohols, and holding time in Ferrara et al. are different than in the present invention but it would have been within the purview of an ordinary skilled artisan to arrive at the present invention. The Examiner again states that, as in JP '662, the relationship between time, temperature and pressure can be optimized through routine experimentation. The Examiner, in response to Applicants previously filed arguments, states that the extra steps required in Ferrara et al. are not required in the present invention since they are not excluded due to the use the claim language "comprising".

Applicants submit that Ferrara et al does not teach or suggest the claimed invention. Applicants have amended claims 1 and 20 to recite that all or substantially all of the liquid is removed by evaporation. This amendment excludes from the scope of the claims removal of liquid by filtration as in Ferrara et al. The solvent in Ferrara et al. is a mixture of organic solvents, an alkane and an alcohol that are used for extraction. The use of an extraction step is salient to the success of Ferrara et al. Furthermore, Ferrara et al. does not teach or suggest any other possibility other than extraction with a solvent system followed by filtration to remove the solvent. There is no teaching or suggestion in Ferrara et al. regarding carrying out the reactions under pressures greater than ambient pressure, let alone regarding removal of liquids by venting the high pressure. As claimed in the present application, all or substantially all of the liquid is removed from the reaction by release of the vapor. In contrast, in the cited art, the liquid is removed from the product in the liquid phase. There is no disclosure in Ferrara et al related to removal of liquid from the reaction in a vapor phase. Applicants, thus, assert that even if the steps of Ferrara were included in the claimed method, the present reaction would not be obvious over Ferrara et al. because Ferrara doesn't teach removal of the liquid by venting the pressure.

As stated in the earlier response, all of the processing steps in Ferrara et al. are carried out at temperatures well below the temperatures of the present invention. With regard to Examiner's comments regarding the relationship between time, temperature and pressure, Applicants submit that for the reasons discussed above with respect to JP '662, the claimed method is not obvious.

Based on the above discussion, Applicants respectfully request the rejection of the claims under 35 U.S.C over Ferrara et al be withdrawn.

The Office Action rejected claims 1-4, 8, 9, 11-15, 20, 21 and 26-32 under 35 U.S.C. 103(a) as being unpatentable over Melnychyn et al. The Office Action stated that Melnychyn et al discloses a method for preparing a soy protein product by blending the protein with alcohol and also a reducing agent at a temperature above ambient temperature. The Office Action further stated that Melnychyn et. al is silent regarding the holding times greater than 10 minutes but it would have been within the purview of an ordinary skilled artisan to arrive at the present invention. The Examiner again states that, as in JP '662 and Ferrara et al., the relationship between time, temperature and pressure can be optimized through routine experimentation.

Applicants submit that Melnychyn et al does not teach or suggest the present invention. Melnychyn et al. teach the use of aqueous alkaline extraction and the use of an alcohol as an improving agent. After treatment with the improving agent, the proteinaceous product is precipitated, centrifuged and the liquid decanted. See Melnychyn, col. 3, lines 68-71. All of these steps are carried out at a temperature below the boiling point of the improving agent. Melnychyn et al. recommend carrying out the reaction at room temperature. See col. 4, lines 4-7. In contrast, as discussed above, the present invention is conducted at temperatures greater than 90°C, at a pressure greater than 10psi and the liquid in the reaction is removed by release of the pressure. Applicants assert that Melnychyn does not teach or suggest the claimed invention to a person of the ordinary skill in the art for the reasons discussed above and a person of ordinary skill in the art would not have a reasonable expectation of success that the claimed method could result in a proteinaceous product with improved solubility and retention of color characteristics.

Based on the above discussion, Applicants respectfully request that the rejection of the claims under 35 U.S.C over Melnychyn et al. be withdrawn.

The Examiner rejected claims 16, 33 and 34 under 35 U.S.C. 103(a) as being unpatentable over JP 55-88662, Melnychyn or Ferrara et al taken together with WO 95/04467 (WO '467). The Office Action stated that it is well-known to include a protein source such as soybean protein to animal feed compositions as taught in WO '467 and it would have been obvious to one having ordinary skill in the art to include soybean protein concentrate to animal feed.

As discussed above, JP '662, Ferrara et al. and Melnychyn et al. do not teach or suggest the claimed invention. WO '467 relates to animal feed compositions. The methods used to obtain the animal feed compositions in WO '467 are entirely different than the ones used in the instant invention. Pages 3 and 4 referred to by the Examiner in WO '467 merely suggest the use of soybean protein in animal feed but they do not suggest the use of the proteinaceous product prepared according to the claims of this application. There is no teaching in WO '467 that when taken together with JP '662, Ferrara et al. or Melnychyn the result would be the claimed method.

Based on the discussion above, the Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. 103(a) over JP 55-88662, Melnychyn or Ferrara et al taken together with WO 95/04467 (WO '467) and allowance of all the claims in the application.

It is believed that the elected claims are neither taught nor suggested by the prior art, and allowance of all the claims is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: Z. Peter Sawicki

Z. Peter Sawicki, Reg. No. 30,214
Suite 1400
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

ZPS:VCG:cnn